

## IN THE UNITED STATES RECEIVING OFFICE

Applicant : Shuchong Pan, et. al.  
Serial No. : 10/561,014  
Filed : December 16, 2005  
Title : ISOFORMS OF BRAIN NATRIURETIC PEPTIDE

**MAIL STOP PCT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

RESPONSE TO NOTIFICATION OF MISSING REQUIREMENTS

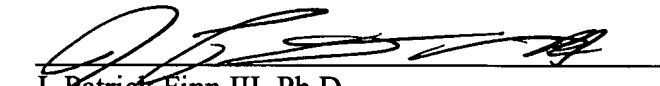
In response to the Notification of Missing Requirements mailed April 6, 2006 (copy enclosed), Applicants as a small entity submit herewith the following:

- ☒ Declaration by the Inventor (3 pages);
- ☒ Power of Attorney by Assignee (with executed copy of Assignment attached) (5 pages);
- ☒ Preliminary Amendment (3 pages);
- ☒ Paper Copy of Substitute Sequence Listing (12 pages);
- ☒ Verified Statement;
- ☒ Diskette.

It is understood that this perfects the application and no additional papers or filing fees are required. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: June 6, 2006

  
J. Patrick Finn III, Ph.D.  
Reg. No. 44,109

Fish & Richardson P.C.  
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Minneapolis, MN 55402  
Telephone: (612) 335-5070  
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60362217.doc

06/09/2006 LLANDGRA 00000060 10561014

01 FC:2617

65.00 OP

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail Label No. EV467329735US

June 6, 2006  
Date of Deposit



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
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 Alexandria, Virginia 22313-1450  
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U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/561,014	Shuchong Pan	07039-409US1

26191  
 FISH & RICHARDSON P.C.  
 PO BOX 1022  
 MINNEAPOLIS, MN 55440-1022

INTERNATIONAL APPLICATION NO.	
PCT/US04/17554	
I.A. FILING DATE	PRIORITY DATE
06/02/2004	06/20/2003

CONFIRMATION NO. 9426  
 371 FORMALITIES LETTER



Date Mailed: 04/06/2006

### NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495).

- Indication of Small Entity Status
- Copy of the International Application filed on 12/16/2005
- Preliminary Amendments filed on 12/16/2005
- Biochemical Sequence Diskette filed on 12/16/2005
- U.S. Basic National Fees filed on 12/16/2005
- Priority Documents filed on 12/16/2005

The applicant needs to satisfy supplemental fees problems indicated below.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.492(h) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.

#### SUMMARY OF FEES DUE:

Total additional fees required for this application is \$65 for a Small Entity:

- \$65 Surcharge.

**ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.**

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

INDIA L EVANS

Telephone: (703) 308-9140 EXT 212

**PART 1 - ATTORNEY/APPLICANT COPY**

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/561,014	PCT/US04/17554	07039-409US1

## **STIC Biotechnology Systems Branch**

### **RAW SEQUENCE LISTING** **ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/561,014  
Source: LEWP  
Date Processed by STIC: 12/30/05

**THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.**

**PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:**

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

**FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221**

**TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.2.2 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:**

**<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>**

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/efc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05):  
U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/24/05

## Raw Sequence Listing Error Summary

ERROR DETECTED	SUGGESTED CORRECTION	SERIAL NUMBER: <u>10/561,014</u>
<b>ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE</b>		
1 _____ Wrapped Nucleics Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."	
2 _____ Invalid Line Length	The rules require that a line not exceed 72 characters in length. This includes white spaces.	
3 _____ Misaligned Amino Numbering	The numbering under each 5 <sup>th</sup> amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.	
4 _____ Non-ASCII	The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.	
5 _____ Variable Length	Sequence(s) _____ contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.	
6 _____ PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.	
7 _____ Skipped Sequences (OLD RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped  Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.	
8 _____ Skipped Sequences (NEW RULES)	Sequence(s) _____ missing. If intentional, please insert the following lines for each skipped sequence. <210> sequence id number <400> sequence id number 000	
9 _____ Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present. In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.	
10 _____ Invalid <213> Response	Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence	
11 _____ Use of <220> →	Sequence(s) _____ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)	
12 _____ PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.	
13 _____ Misuse of n/Xaa	"n" can only represent a single nucleotide; "Xaa" can only represent a single amino acid	



IFWP

## RAW SEQUENCE LISTING

DATE: 12/30/2005

PATENT APPLICATION: US/10/561,014

TIME: 09:38:13

Input Set : A:\07039-409.txt

Output Set: N:\CRF4\12302005\J561014.raw

4 <110> APPLICANT: Pan, Shuchong  
5 Simari, Robert D.  
7 <120> TITLE OF INVENTION: Isoforms of Brain Natriuretic Peptide  
10 <130> FILE REFERENCE: 07039-409US1  
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/561,014  
C--> 12 <141> CURRENT FILING DATE: 2005-12-16  
12 <150> PRIOR APPLICATION NUMBER: PCT/US2004/017554  
13 <151> PRIOR FILING DATE: 2004-06-02  
15 <150> PRIOR APPLICATION NUMBER: US 60/480,460  
16 <151> PRIOR FILING DATE: 2003-06-20  
18 <160> NUMBER OF SEQ ID NOS: 38  
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
22 <210> SEQ ID NO: 1  
23 <211> LENGTH: 33  
24 <212> TYPE: PRT  
25 <213> ORGANISM: Homo sapiens  
27 <400> SEQUENCE: 1  
28 Gly Lys His Pro Leu Pro Pro Arg Pro Pro Ser Pro Ile Pro Val Cys  
29 1 5 10 15  
30 Asp Thr Val Arg Val Thr Leu Gly Phe Val Val Ser Gly Asn His Thr  
31 20 25 30  
32 Leu  
35 <210> SEQ ID NO: 2  
36 <211> LENGTH: 14  
37 <212> TYPE: PRT  
38 <213> ORGANISM: Homo sapiens  
40 <400> SEQUENCE: 2  
41 Val Val Gln Lys Glu Asn Gln Thr Phe Pro Pro Gly Phe Leu  
42 1 5 10  
44 <210> SEQ ID NO: 3  
45 <211> LENGTH: 162  
46 <212> TYPE: PRT  
47 <213> ORGANISM: Homo sapiens  
49 <400> SEQUENCE: 3  
50 Met Asp Pro Gln Thr Ala Pro Ser Arg Ala Leu Leu Leu Leu Phe  
51 1 5 10 15  
52 Leu His Leu Ala Phe Leu Gly Gly Arg Ser His Pro Leu Gly Ser Pro  
53 20 25 30  
54 Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn  
55 35 40 45  
56 His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu  
57 50 55 60  
58 Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg

6-7  
Does Not Comply  
Corrected Diskette Needed

## RAW SEQUENCE LISTING

DATE: 12/30/2005

PATENT APPLICATION: US/10/561,014

TIME: 09:38:13

Input Set : A:\07039-409.txt

Output Set: N:\CRF4\12302005\J561014.raw

```

59 65          70          75          80
60 Glu Val Ala Thr Glu Gly Ile Arg Gly His Arg Lys Met Val Leu Tyr
61          85          90          95
62 Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys
63          100          105          110
64 Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Gly Leu Gly Cys
65          115          120          125
66 Lys Gly Lys His Pro Leu Pro Pro Arg Pro Pro Ser Pro Ile Pro Val
67          130          135          140
68 Cys Asp Thr Val Arg Val Thr Leu Gly Phe Val Val Ser Gly Asn His
69 145          150          155          160
70 Thr Leu

```

73 &lt;210&gt; SEQ ID NO: 4

74 &lt;211&gt; LENGTH: 143

75 &lt;212&gt; TYPE: PRT

76 &lt;213&gt; ORGANISM: Homo sapiens

78 &lt;400&gt; SEQUENCE: 4

```

79 Met Asp Pro Gln Thr Ala Pro Ser Arg Ala Leu Leu Leu Leu Leu Phe
80 1          5          10          15
81 Leu His Leu Ala Phe Leu Gly Gly Arg Ser His Pro Leu Gly Ser Pro
82          20          25          30
83 Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn
84          35          40          45
85 His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu
86          50          55          60
87 Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg
88 65          70          75          80
89 Glu Val Ala Thr Glu Gly Ile Arg Gly His Arg Lys Met Val Leu Tyr
90          85          90          95
91 Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys
92          100          105          110
93 Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys
94          115          120          125
95 Lys Val Val Gln Lys Glu Asn Gln Thr Phe Pro Pro Gly Phe Leu
96          130          135          140

```

98 &lt;210&gt; SEQ ID NO: 5

99 &lt;211&gt; LENGTH: 489

100 &lt;212&gt; TYPE: DNA

101 &lt;213&gt; ORGANISM: Homo sapiens

103 &lt;400&gt; SEQUENCE: 5

```

104 atggatcccc agacagcacc ttcccgggag ctccctgctcc tgctcttctt gcatctggct 60
105 ttctctgggag gtcgttccca cccgctgggc agccccggtt cagcctcgga cttggaaaac 120
106 tccgggttac aggagcagcg caaccatttg cagggcaaac tgcggagct gcaggtggag 180
107 cagacatccc tggagcccct ccaggagagc ccccgctcca caggtgtctg gaagtcccgg 240
108 gaggtagcca ccgagggcat ccgtgggcac cgcaaaatgg tcctctacac cctgcgggca 300
109 ccacgaagcc ccaagatggt gcaagggtct ggctgctttg ggaggaagat ggaccggatc 360
110 agctcctcca gtggcctggg ctgcaaaagg aagcaccccc tgccaccccg gccgccttcc 420
111 cccattccag tgtgtgacac tgtagagtc actttggggg ttgttgtctc tgggaaccac 480
112 actctttga

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/561,014

DATE: 12/30/2005

TIME: 09:38:13

Input Set : A:\07039-409.txt

Output Set: N:\CRF4\12302005\J561014.raw

```

114 <210> SEQ ID NO: 6
115 <211> LENGTH: 432
116 <212> TYPE: DNA
117 <213> ORGANISM: Homo sapiens
119 <400> SEQUENCE: 6
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121 ttctctgggag gtcgttccca cccgctgggc agccccggtt cagcctcgga cttggaaaacg      120
122 tccgggttac aggagcagcg caaccatttg cagggcaaac tgctcgagct gcagggtggag      180
123 cagacatccc tggagcccct ccaggagagc ccccgctcca caggtgtctg gaagtcccgg      240
124 gaggtagcca ccgagggcat ccgtgggcac cgcaaatgg tcctctacac cctgcgggca      300
125 ccacgaagcc ccaagatggt gcaagggtct ggctgctttg ggaggaagat ggaccggatc      360
126 agctcctcca gtggcctggg ctgcaaagtg gtgcagaaag agaaccacaa atttctctct      420
127 ggtttctct aa                                     432

129 <210> SEQ ID NO: 7
130 <211> LENGTH: 44
131 <212> TYPE: PRT
132 <213> ORGANISM: Pongo pygmaeus
134 <400> SEQUENCE: 7
135 Gly Glu His Pro Leu Pro Pro Arg Leu Pro Ala Pro Ile Pro Val Cys
136 1 5 10 15
137 Asp Thr Val Arg Val Thr Leu Gly Phe Val Val Ser Gly Asn His Thr
138 20 25 30
139 Leu Arg Lys Cys His Leu Asp Ile Thr Ser Ser Cys
140 35 40

142 <210> SEQ ID NO: 8
143 <211> LENGTH: 58
144 <212> TYPE: PRT
145 <213> ORGANISM: Sus scrofa
147 <400> SEQUENCE: 8
148 Gly Glu His Pro Pro Phe Pro Leu His Ala Pro Val Ser Ile Thr
149 1 5 10 15
150 Ser Gly Phe Asp Val Ser Gly Asp Gln Thr Pro Arg Lys Gly His Leu
151 20 25 30
152 Asp Ile Thr Leu Ser Cys Cys Gln Ser Ser Arg Pro Arg Ser Ala Phe
153 35 40 45
154 Leu Glu Lys Leu Asn Leu Asp Ser Ile His
155 50 55

157 <210> SEQ ID NO: 9
158 <211> LENGTH: 33
159 <212> TYPE: PRT
160 <213> ORGANISM: Pan troglodytes
162 <400> SEQUENCE: 9
163 Gly Glu His Pro Leu Pro Pro Arg Pro Pro Ser Pro Ile Pro Val Cys
164 1 5 10 15
165 Asp Thr Val Arg Val Thr Leu Gly Phe Val Val Ser Gly Asn His Thr
166 20 25 30
167 Leu
170 <210> SEQ ID NO: 10
171 <211> LENGTH: 78

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## RAW SEQUENCE LISTING

DATE: 12/30/2005

PATENT APPLICATION: US/10/561,014

TIME: 09:38:13

Input Set : A:\07039-409.txt

Output Set: N:\CRF4\12302005\J561014.raw

```

172 <212> TYPE: PRT
173 <213> ORGANISM: Ovis aries
175 <400> SEQUENCE: 10
176 Gly Glu Arg Leu Ser Ala Phe Pro Leu His Ile Thr Ile Arg Ala Thr
177 1 5 10 15
178 Ser Gly Ser Asp Val Ser Gly Asp Gln Ile Leu Asn Lys Glu His His
179 20 25 30
180 Ser Ser Leu Leu Ala Val Leu Arg Ala Lys Ala Cys Leu Ser Gly Asn
181 35 40 45
182 Ile Lys Phe Gly Gln His Ser Leu Ser Cys Leu Gly Ala Pro Ser Ile
183 50 55 60
184 His Leu Leu Pro Leu Thr Glu Arg Gly Arg Ile Phe Arg Met
185 65 70 75
187 <210> SEQ ID NO: 11
188 <211> LENGTH: 26
189 <212> TYPE: PRT
190 <213> ORGANISM: Mus musculus
192 <400> SEQUENCE: 11
193 Gly Glu His Leu Pro Cys His Phe Pro Ala Lys Leu His Thr His Pro
194 1 5 10 15
195 Ile Pro Val His Ala Thr Leu Arg Gly Pro
196 20 25
198 <210> SEQ ID NO: 12
199 <211> LENGTH: 33
200 <212> TYPE: PRT
201 <213> ORGANISM: Gorilla gorilla
203 <400> SEQUENCE: 12
204 Gly Glu His Pro Leu Pro Pro Arg Pro Pro Ser Pro Ile Pro Val Cys
205 1 5 10 15
206 Asp Thr Val Arg Val Thr Leu Gly Phe Val Val Ser Gly Asn His Thr
207 20 25 30
208 Leu
211 <210> SEQ ID NO: 13
212 <211> LENGTH: 86
213 <212> TYPE: PRT
214 <213> ORGANISM: Felis catus
216 <400> SEQUENCE: 13
217 Gly Lys Pro Pro Pro Cys Gln Leu Asp Pro Pro Ala Pro Leu Leu Trp
218 1 5 10 15
219 Val Pro Pro Ser Glu Pro Leu Leu Gly Leu Leu Ser Leu Gly Thr Asn
220 20 25 30
221 Ser Glu Lys Lys Thr Leu Gly Leu Tyr Ser Leu Leu Leu Thr Val Leu
222 35 40 45
223 Lys Ala Lys Gly Arg Leu Ser Gly Asn Ile Lys Cys Gly His His Ser
224 50 55 60
225 Leu Leu Cys Pro Pro Arg Val Thr His Leu Leu Leu Pro Leu Trp Pro
226 65 70 75 80
227 Lys Gly Ala Glu Ser Pro
228 85

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## RAW SEQUENCE LISTING

DATE: 12/30/2005

PATENT APPLICATION: US/10/561,014

TIME: 09:38:13

Input Set : A:\07039-409.txt

Output Set: N:\CRF4\12302005\J561014.raw

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230 <210> SEQ ID NO: 14
231 <211> LENGTH: 169
232 <212> TYPE: PRT
233 <213> ORGANISM: Canis familiaris
235 <400> SEQUENCE: 14
236 Met Glu Pro Cys Ala Ala Leu Pro Arg Ala Leu Leu Leu Leu Leu Phe
237   1             5             10             15
238 Leu His Leu Ser Pro Leu Gly Gly Arg Pro His Pro Leu Gly Gly Arg
239             20             25             30
240 Ser Pro Thr Ser Glu Ala Ser Glu Ala Ser Glu Ala Ser Gly Leu Trp
241             35             40             45
242 Ala Val Gln Glu Leu Leu Gly Arg Leu Lys Asp Ala Val Ser Glu Leu
243             50             55             60
244 Gln Ala Glu Gln Leu Ala Leu Glu Pro Leu His Arg Ser His Ser Pro
245 65             70             75             80
246 Ala Glu Ala Pro Glu Ala Gly Glu Glu Arg Pro Val Gly Val Leu Ala
247             85             90             95
248 Pro His Asp Ser Val Leu Gln Ala Leu Arg Arg Leu Arg Ser Pro Lys
249             100            105            110
250 Met Met His Lys Ser Gly Cys Phe Gly Arg Arg Leu Asp Arg Ile Gly
251             115            120            125
252 Ser Leu Ser Gly Leu Gly Cys Asn Gly Lys Pro Pro Cys His Leu
253             130            135            140
254 Gly Ser Pro Ser Pro Ala Pro Trp Val Arg Pro Leu Glu Pro Leu Leu
255 145            150            155            160
256 Gly Leu Leu Ser Arg Gly Ile Thr Leu
257             165
259 <210> SEQ ID NO: 15
260 <211> LENGTH: 15
261 <212> TYPE: PRT
262 <213> ORGANISM: Dendroaspis angusticeps
264 <400> SEQUENCE: 15
265 Pro Ser Leu Arg Asp Pro Arg Pro Asn Ala Pro Ser Thr Ser Ala
266   1             5             10             15
268 <210> SEQ ID NO: 16
269 <211> LENGTH: 32
270 <212> TYPE: PRT
271 <213> ORGANISM: Homo sapiens
273 <400> SEQUENCE: 16
274 Ser Pro Lys Met Val Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp
275   1             5             10             15
276 Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys Lys Val Leu Arg Arg His
277             20             25             30
279 <210> SEQ ID NO: 17
280 <211> LENGTH: 41
281 <212> TYPE: PRT
282 <213> ORGANISM: Dendroaspis angusticeps
284 <400> SEQUENCE: 17
285 Glu Val Lys Tyr Asp Pro Cys Phe Gly His Lys Ile Asp Arg Ile Asn

```

10/561,014

6

<210> 20  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> polypeptide

insufficient explanation - give source of  
genetic material

(see item 11 on

Enon summary  
sheet)

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/561,014

DATE: 12/30/2005  
TIME: 09:38:14

Input Set : A:\07039-409.txt  
Output Set: N:\CRF4\12302005\J561014.raw

*PYI*  
Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:20; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23

Seq#:20; Xaa Pos. 24,25,26,27,28,29,31,32,33,34

VERIFICATION SUMMARY  
PATENT APPLICATION: US/10/561,014

DATE: 12/30/2005  
TIME: 09:38:14

Input Set : A:\07039-409.txt  
Output Set : N:\CRF4\12302005\J561014.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No  
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:322 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!  
L:326 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:330 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:334 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
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L:371 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
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L:379 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:383 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:387 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:391 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:395 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:400 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:404 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:408 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:412 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:416 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:420 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:424 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:428 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:432 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:436 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:440 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:444 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:448 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:452 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:453 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0  
L:455 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:16  
L:457 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:32